



## Fact Sheets and Information Papers

### Disposal of Bouin's Fixative Solution

April 2006

The following is based on federal criteria. State or local regulations may be more stringent.

**1. BACKGROUND.** Bouin's fixative solution is used in the histology lab for fixing tissue and staining. This solution contains formaldehyde (9-25%); acetic acid (5%); methanol (5%); picric acid (<1%); and the balance is water. It can either be purchased as a commercially pre-made solution or it can be prepared in the laboratory by mixing the appropriate amounts of the required ingredients. This information paper does not discuss the bouin's solution that is made in the laboratory, only the pre-made solution. Questions or concerns regarding bouin's solution that is made in the laboratory may be directed to the point of contact below.

**2. SAFETY CONCERNS.** Picric acid is shock and friction sensitive when dry. The picric acid in the bouin's solution is considered saturated and is unlikely to form crystals under normal conditions of use and storage. Care should be taken to ensure that crystals are not allowed to form during use of the solution by wiping the threads of the container and cap after pouring.

### **3. DISPOSAL.**

a. Any waste stream should be characterized, according to 40 CFR 261, prior to disposal. Generally, bouin's solution does not exhibit the hazardous waste characteristics of ignitability, toxicity, or reactivity. The material safety data sheet (MSDS) provided by the vendor can assist in determining any characteristics. Flashpoint (ignitability) should be determined if the solution contains a greater percentage of methanol than listed above. The pH should be tested and if necessary adjusted accordingly prior to disposal.

b. The used solution may be disposed through the sanitary sewer provided the disposal of aldehydes does not violate the wastewater treatment permit. A notification of intent to dispose bouin's solution in the sanitary sewer should be made to the wastewater treatment plant or the installation environmental office prior to initiating this type of activity. Coordinate with the Environmental Science Officer in the Preventive Medicine Service for assistance with this notification. If the wastewater treatment permit prohibits this type of disposal, the solution should be collected, neutralized if necessary, and disposed of as non-hazardous waste through a disposal contractor or the Defense Reutilization and Marketing Office (DRMO).

c. Any expired solution should be characterized, (para 3a) and turned-in to DRMO for disposal. The expired solution will be a non-hazardous waste if the solution has been neutralized (when necessary) and exhibits no other hazardous waste characteristics.

d. Unused quantities that will not be used prior to expiration should be returned to the manufacturer or turned in through Logistics to the DRMO as a marketable product.

**4. POINT OF CONTACT** for this information paper is Ms. Sandy Toscano at DSN 584-3651 or commercial (410) 436-3651.

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